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**4759****BOARD DIPLOMA EXAMINATION, (C-14)****MARCH/APRIL-2019****DME - SIXTH SEMESTER EXAMINATION****ENERGY SOURCES & POWER PLANT ENGINEERING**

Time: 3 Hours ]

[Max.Marks: 80

**PART -A****10 x 3 = 30M**

**Instructions:** 1) Answer **all** questions. Each question carries **three** marks.  
2) Answers should be brief and straight to the point and shall not exceed five simple sentences.

- 1) Differentiate between Renewable energy and Non-Renewable energy.
- 2) Define a) Beam radiation b) Diffuse radiation c) Global radiation.
- 3) Define power coefficient and Tip speed ratio of a Wind mill.
- 4) List out the various types of fuels used in fuel cells.
- 5) What is biogas? And write any two applications of biogas.
- 6) Mention advantages and disadvantages of tidal energy.
- 7) What are the desirable properties of coolants used in nuclear power plant?
- 8) Write any three differences between jet condenser and surface condenser.
- 9) List out the basic elements of thermal power plant.
- 10) Write short notes of global warming.

**PART-B**

**5X10=50M**

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**Instructions:** 1) Answer any **five** questions.  
2) Each question carries **ten** marks.  
3) Answers should be comprehensive and the criteria for valuation is the content but not the length of the answer.

11) Describe the working of solar absorption refrigeration system with neat sketch.

12) Explain the working of Vertical axis wind mill with neat sketch.

13) Describe the construction and working of Floating type Biogas Digester with neat sketch.

14) Explain various methods for the utilization of tidal energy.

15) Explain the construction details and working principle of Hydrogen fuel cell with a neat sketch.

16) Draw a layout of thermal power plant and explain the functions of major components.

17) Describe the operation of BWR power plant with neat sketch.

18) Write short notes on the following.

a) Effects of nuclear radiation

b) Effect of thermal pollution.

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